REMARKS

Claims 1-22 were previously pending in the application with claims 1 and 17 being the independent claims. Claims 1-22 are currently amended. Claim 11 is currently canceled. Independent claim 23 is currently added. No new matter has been added by way of the foregoing amendments. Reconsideration of presently pending claims 1-10 and 12-23 is respectfully requested in light of the above amendments and the following remarks.

Claim Rejections – 35 U.S.C § 101

Claims 1-22 were rejected under 35 U.S.C. § 101 for being directed to non-statutory subject matter.

Claim 1 has been amended and recites in part, "A computer program product that includes a computer-readable medium, the medium having stored thereon a sequence of instructions which, when executed by a processor, causes the processor to execute a method, the computer program product comprising: . . . ." There is support for the foregoing amendments at least at Figure 5 and paragraphs 0053-0055 of the Application. Under In re Beauregard, and as explained in MPEP §2106.01(I), claims reciting "A computer-readable medium having computer-executable instructions for performing a method" are statutory subject matter. Independent claim 1 is a Beauregard-style claim, reciting "A computer program product that includes a computer-readable medium, the medium having stored thereon a sequence of instructions which, when executed by a processor, causes the processor to execute a method". Claims 2-16 depend from and further limit claim 1. Since Beauregard-style claims are statutory subject matter under §101, the rejection of claims 1-16 under §101 should be withdrawn.

Further, claim 17 has been amended and recites in part, "a computer program product that includes a computer-readable medium, the medium having stored thereon a sequence of instructions which, when executed by a processor, causes the processor to execute a method of calculating a client listing using an inference engine, the method comprising . . . ." There is support for the foregoing amendments at least at Figure 5 and paragraphs 0053-0055 of the Application. As discussed above with respect to claim 1, claim 17 is a Beauregard-style claim, and therefore is directed to statutory subject matter. Further, claims 18-22 depend from and further limit claim 17. Accordingly, the rejections under 35 U.S.C. § 101, with respect to claims 17-22 under §101 should be withdrawn.

Claims 2-16 and 18-22 are also currently amended to reflect the amendments to the preamble of claims 1 and 17.

Claim Rejections – 35 U.S.C § 103

Claims 1-22 were rejected under 35 U.S.C. §103(a) as being obvious over Brown, et al. ("A Centralized Approach to Factory Simulation," 1997, Future Fab International, pp.1-9, hereinafter referred to as "Brown"). Applicant traverses this rejection on the grounds that Brown is defective in establishing a *prima facie* case of obviousness with respect to claims 1-22.

In *KSR Int'l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007), the Court stated that "a patent composed of several elements **is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art**. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a **reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does**. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *Id.* at 1741 (emphasis added).

As the PTO recognizes in MPEP § 2142:

> ... *The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness...*

In the present application, the Examiner has not established a *prima facie* case of obviousness for the reasons set forth below.

Independent Claims 1 and 17

Independent Claim 1

Official notice

The Office Action concedes on page 5 that "Brown does not explicitly teach ranking the various factories in a list (i.e. benchmarking list)." Office Action, p.5. However, the Office Action asserts Official Notice that ranking various factories in a list " is old and well known in the art . . . ." Office Action, p.5. MPEP § 2144.03(A) provides that "It would <u>not</u> be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known." It is respectfully submitted that "ranking various factories in a list (i.e. benchmarking list)," as suggested by the Office Action, is not equivalent to "an inference engine configured to rank a plurality of clients using at least one parameter associated with each of the plurality of clients," as recited in claim 1. Accordingly, MPEP §

2144.03(C) provides that "If applicant adequately traverses the examiner's assertion of official notice, the examiner must provide documentary evidence in the next Office Action if the rejection is to be maintained." Therefore, Applicants respectfully request that the Examiner submit the required documentary evidence to support the alleged assertion that ranking factories in a list was known in the art at the time of the filing of the Application.

All words in a claim must be considered

Claim 1 is currently amended to include limitations that were recited in claim 11 (currently canceled). Specifically, claim 1 is currently amended to recite "an inference engine communicably coupled to a virtual fab." With respect to claim 11, the Office Action alleges that Brown teaches that "the inference engine is further connected to a virtual fab." The Office Action alleges on page 8 that Brown teaches the foregoing at page 3, Figure 1, and page 4 top paragraph, and further alleges that "the Factory Models are connected to the Capacity, Cost and Simulation engines, i..e. [sic] a virtual fab." Office Action, pg. 8. However, the cited portions of Brown fail to teach, show, or suggest "an inference engine communicably coupled to a virtual fab," as recited in claim 1.

The present Application teaches an exemplary embodiment of "a virtual fab" at least at paragraph 0035-0036 and Figure 3, as follows: "Referring now to Fig. 3, a virtual IC fabrication system (a "virtual fab") 300, to which the system 200 of Fig. 2 may be connected, is illustrated. The virtual fab 300 includes a plurality of entities 302, 304, 306, 308, 310, 312, 314, ..., N that are connected by a communications network 316. The network 316 may be a single network or may be a variety of different networks, such as an intranet and the Internet, and may include both wireline and wireless communication channels. In the present example, the entity 302 represents a service system for service collaboration and provision, the entity 304 represents a customer, the entity 306 represents an engineer, the entity 308 represents a design/laboratory (lab) facility for IC design and testing, the entity 310 represents a fabrication (fab) facility, and the entity 312 represents a process (e.g., an automated fabrication process), and the entity 314 represents another virtual fab (e.g., a virtual fab belonging to a subsidiary or a business partner). Each entity may interact with other entities and may provide services to and/or receive services from the other entities." Application, ¶ 0035-0036.

A person of ordinary skill in the art would find that the Factory Models and Capacity, Cost and Simulation Engines taught by Brown are not equivalent to "an inference engine communicably coupled to a virtual fab," as recited in claim 1. As shown in Figure 1 of Brown, the Capacity, Cost and Simulation Engines merely process data from simulation models (the Factory Models), and provide the data to an Excel User Interface for output to reports, charts and worksheets. The Factory Models and Capacity, Cost and Simulation Engines taught by Brown do not provide the various services that may be provided by a

"virtual fab," as recited in claim 1. Thus, Brown fails to teach, show, or suggest all of the elements of claim 1.

Accordingly, the Examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met. Therefore, for at least the additional reasons set forth above, it is respectfully submitted that the rejection of claim 1 under 35 U.S.C. § 103 over Brown should also be reconsidered and withdrawn.

Independent Claim 17

Independent claim 17 was also rejected under 35 U.S.C. §103(a) as being obvious over Brown. Similar to claim 1, claim 17 is currently amended to recite "A computer program product that includes a computer-readable medium, the medium having stored thereon a sequence of instructions which, when executed by a processor, causes the processor to execute a method of calculating a client listing using an inference engine communicably coupled to a virtual fab, the method comprising . . . ." Accordingly, the same arguments set forth above with respect to claim 1 apply equally to claim 17.

Thus, the Examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met, and the rejection of claim 17, and all claims which depend from and further limit claims 17, under 35 U.S.C. §103(a) should be withdrawn.

Dependent Claims 2-16 and 18-22

Claims 2-16 and 18-22 were also rejected under 35 U.S.C. § 103 as being anticipated by Brown. As discussed above, claim 11 is currently canceled. Each of claims 2-10 and 12-16 depends from and further limits claim 1, and therefore includes at least the elements of claim 1. Further, each of claims 18-22 depend from and further limit claim 17, and therefore includes at least the elements of claim 17. Claims 1 and 17 have been shown above to be non-obvious over Brown as discussed above. Thus, claims 2-10 and 12-16 and 18-22 are also allowable over Brown for at least the same reasons as noted above with respect to claims 1 and 17.

Therefore, at least for the reasons set forth above, it is respectfully submitted that the rejection of claims 2-10 and 12-16 and 18-22 under 35 U.S.C. § 103 over Brown should also be reconsidered and withdrawn.

Dependent Claim 2

Further, with respect to claim 2, the Office Action alleges that Brown teaches chip implementation merely because the factory taught by Brown is a wafer fab. Office Action, p.5. However, this is an insufficient basis to establish a prima facie case of obviousness.

The Application teaches exemplary embodiments of "chip implementation factors" at least at paragraph 18, as follows: "The scope of knowledge used by inference engine 100 covers chip implementation factors such as reference flow, place and route (P&R), and merge service." Application, ¶0018. In contrast, Brown merely teaches "a characteristic curve showing the relationship between factory loading (start rate), cycle time, and cost per unit produced," a chart that shows "the significance of operator staffing as factory loading is increased," and a chart that shows potential capacity increases under alternative operating practices. Brown, pp. 4-6.

However, nowhere does Brown teach, show, or suggest "at least one parameter includes one of manufacturing technology, product type, volume of purchase order, client physical region, design library, tapeout instance, technology file, and chip implementation," as recited in claim 2. As discussed above with respect to claims 1 and 17, MPEP §2144.03(A) provides that "[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known" (emphasis in original). Here, the Office Action appears to be taking official notice. Accordingly, Applicants respectfully request that if the rejection is maintained, that the next Office Action provide a prior art reference in compliance with MPEP 2144.03A.

Dependent Claims 3 and 4

Further, with respect to claims 3 and 4, the Office Action concedes that Brown does not teach the manufacturing technology recited in claim 3 or the product types recited in claim 4. Office Action, pp.5-6. However, the Office Action alleges that "manufacturing technology" and "product types" as recited in claims 3 and 4 respectively "are old and well known in the art . . . ." Office Action, pg. 6. As discussed above with respect to claims 1 and 17, MPEP § 2144.03(A) provides that "[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known." Applicants respectfully disagree with the Office Action's assertion that the manufacturing technology and product types recites in claims 3 and 4 respectively were known in the art at the time the Application was filed. Therefore, Applicants respectfully request that the Examiner submit the required documentary evidence to support the alleged assertion that the manufacturing technology and product types recites in claims 3 and 4 respectively were known in the art at the time the Application was filed.

Dependent Claim 12

The Office Action concedes on pages 8-9 that Brown does not teach "the knowledge collection module collects the client information from a plurality of client databases in the virtual fab," as recited in

claim 12. However, the Office Action takes official notice that, "inputting data in from a database, where the data is stored in the database, is old and well known and would have provided a predictable result in combination with the teachings of Brown regarding the modeling of various factories." Nonetheless, as discussed above with respect to claim 1, the Factory Models and the Capacity, Cost, and Simulation Engines taught by Brown do not teach, show, or suggest a "virtual fab," as recited in claims 1 and 12. Thus, Brown fails to teach, show, or suggest all of the elements of claim 12.

Accordingly, the Examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met, and the rejection of claim 12, and all claims which depend from and further limit claim 12, under 35 U.S.C. §103(a) should be withdrawn.

Dependent Claim 13

Claim 13, as amended, recites that "the virtual fab is an entity of a <u>communications</u> network." There is support for the foregoing amendment at least at paragraph 0035 of the Application, which states the following: "The virtual fab 300 includes a plurality of entities 302, 304, 306, 308, 310, 312, 314, …, N that are connected by a communications network 316." Application, ¶ 0035. Claim 13 depends from and further limits claim 12, and therefore includes at least the elements of claim 12. Claim 12 has been shown above to be non-obvious over Brown as discussed above. Thus, claim 13 is also allowable over Brown for at least the same reasons as noted above with respect to claim 12.

Further, the Office Action alleges that Brown at page 7 teaches that the "virtual fab is an entity of a communications network," as recited in claim 13. In contrast, Brown at page 7 merely teaches that the simulation project taught by Brown will coordinate with a supply chain. A person of ordinary skill in the art would find that neither the simulation project nor the supply chain taught by Brown is either a virtual fab or a communications network. Thus, Brown fails to teach, show, or suggest that the "the virtual fab is an entity of a communications network," as recited in claim 13. Accordingly, the Examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met, and the rejection of claim 13 under 35 U.S.C. § 103 should be reconsidered and withdrawn.

Dependent Claim 14

With respect to claim 14, the Office Action alleges that Brown teaches that "the virtual fab further includes: a plurality of nodes; a manufacturing entity; an engineer entity; a foundry entity; a design library entity; and a plurality of databases," as recited in claim 14. However, claim 14 depends from and further limits claim 13, and therefore includes at least the elements of claim 13. Claim 13 has been shown above to be non-obvious over Brown as discussed above. Thus, claim 14 is also allowable over Brown for at least the same reasons as noted above with respect to claim 13.

Further, with respect to claim 14, the Office Action takes official notice that the nodes recited in claim 14 are old and known in the art in semiconductor manufacturing. As discussed above, MPEP § 2144.03(A) provides that "[i]t would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known." Applicants respectfully disagree with the Office Action's assertion that the nodes recited in claim 14 were known in the art at the Application was filed. Therefore, Applicants respectfully request that the Examiner submit the required documentary evidence to support the alleged assertion that the nodes recited in claim 14 were known in the art at the time of the filing of the Application.

Further, the Office Action fails to cite portions of Brown that teach, show, or suggest a virtual fab that includes "a manufacturing entity; an engineer entity; a foundry entity; a design library entity," as recited in claim 14. Nonetheless, Brown fails teach, show, or suggest the foregoing elements of claim 14. Thus, Brown fails to teach, show, or suggest all elements recited in claim 14.

Accordingly, the Examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met, and the rejection of claim 14, and all claims which depend from and further limit claim 14, under 35 U.S.C. §103(a) should be withdrawn.

Dependent Claims 19 and 20

With respect to claims 19 and 20, the Office Action states on page 12 that claims 17-22 recite similar limitations to those addressed by the rejection of claims 1-16, and are therefore rejected under the same rationale. However, claims 19 and claims 20 recite limitations that are not similar to those recited in claims 1-16. For example, claim 19 recites "wherein collecting knowledge includes tracking client data associated with relevant parameters," and claim 20 recites "setting up parameter-based cost functions includes selecting function type." Brown fails to teach, show, or suggest the limitations recited in claims 19 and 20. Thus, claims 19 and 20 are also allowable over Brown.

Accordingly, the Examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met, and the rejection of claims 19 and 20 under 35 U.S.C. § 103 should be reconsidered and withdrawn.
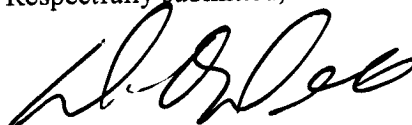

New Independent Claim 23

As set forth above, new independent claim 23 is currently added. Brown fails to recite the system recited in new independent claim 23. Thus, Brown also fails to anticipate new independent claim 23.

Conclusion

An early formal notice of allowance of claims 1-10 and 12-22 is requested. The Examiner is invited to telephone the undersigned if further assistance is necessary. Deposit account number 08-1394 can be used for any over payments or under payments.
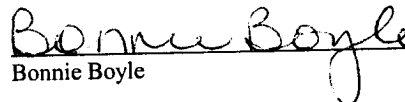
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